

# 琉球大学学術リポジトリ

久米島から採集された日本初記録となるネツタイヒゲナガヨコエビ属 (新称) *Paragrubia* Chevreux, 1901 (端脚目: ヒゲナガヨコエビ科)

メタデータ	言語: 出版者: 琉球大学資料館 (風樹館) 公開日: 2018-09-18 キーワード (Ja): キーワード (En): 作成者: Kodama, Masafumi, Kawamura, Tomohiko, 小玉, 将史, 河村, 知彦 メールアドレス: 所属:
URL	<a href="http://hdl.handle.net/20.500.12000/42411">http://hdl.handle.net/20.500.12000/42411</a>



## First Japanese record of the genus *Paragrubia* Chevreux, 1901 (Crustacea: Amphipoda: Ampithoidae) from Kumejima Island

Masafumi Kodama\* & Tomohiko Kawamura

International Coastal Research Center, Atmosphere and Ocean Research Institute, The University of Tokyo, 1-19-8 Akahama, Otsuchi-cho, Kamihei-gun, Iwate 028-1102, Japan.

\*Corresponding author (e-mail: [mkodama@aori.u-tokyo.ac.jp](mailto:mkodama@aori.u-tokyo.ac.jp))

**Abstract.** The ampithoid amphipod *Paragrubia vorax* Chevreux, 1901 was collected from Kumejima Island, southwest Japan, as the first Japanese record of this genus. Specimens collected from Kumejima Island represent the northernmost record of the species in the Pacific Ocean.

### Introduction

The family Ampithoidae is known as herbivorous amphipods inhabiting seagrass and seaweed beds (Conlan 1982; Poore et al. 2008). The small ampithoid genus *Paragrubia* Chevreux, 1901 is characterized by the accessory flagellum with 3 or more articles, gnathopod I subequal to or larger than gnathopod II, and uropod I peduncle having large distoventral process (Peart & Ahyong 2016), and is currently represented by the following ten species: *P. apoorei* Hughes & Peart, 2013; *P. cassini* Hughes & Peart, 2013; *P. dongara* Hughes & Peart, 2013; *P. dwyeri* Hughes & Peart, 2013; *P. edgari* Peart, 2009; *P. latipoda* Ren, 2001; *P. pilipes* (Ledoyer, 1984); *P. springthorpei* Hughes & Peart, 2013; *P. variata* (Sheard, 1936); *P. vorax* Chevreux, 1901. They have been reported from tropical to temperate shallow waters in the Indo-Pacific (e.g. Ren 2001; Hughes & Peart 2013; Peart & Hughes 2014) but never from Japan.

During the first author's recent leisure-diving trip in Kumejima Island, southwest Japan, the occurrence of *P. vorax* was recognized, and thus, we herein report this as the first Japanese record of the genus *Paragrubia*.

### Material and Methods

The specimens of *P. vorax* were collected from red algal turfs of *Jania* sp. on the subtidal coral reefs in Shichu-gama, Kumejima Island (26°21'16"N, 126°51'25"E; 6–8 m deep) by using SCUBA. Measurements are given for dorsal length, defined

as the length from tip of rostrum to posterior margin of telson. The specimens were dissected under a binocular stereomicroscope, and then appendages were fixed on slide mounts with Hoyer's medium. Observations and line drawings were made by using a light microscope and a binocular stereomicroscope with the aid of drawing tube.

All the specimens examined in this study were deposited in the Ryukyu University Museum Fujukan, University of the Ryukyus, Okinawa, Japan (RUMF).

### Taxonomy

#### Family Ampithoidae Stebbing, 1899

#### Genus *Paragrubia* Chevreux, 1901

New Japanese name: Nettare-hige-naga-yokoebi-zoku

#### *Paragrubia vorax* Chevreux, 1901

New Japanese name: Nettare-hige-naga

(Figs. 1, 2)

*Paragrubia vorax* Chevreux 1901: 427, figs 50–55; Walker 1905: 930; Walker 1909: 343; Schellenberg 1938: 90; Ruffo 1938: 173, fig. v; Ruffo 1969: 63; Barnard 1955: 31, fig. 17; Barnard 1970: 61, fig. 32; Griffiths 1973: 278, fig. 5; Griffiths 1976: 25 (key); Ledoyer 1967: 135, fig. 23; Ledoyer 1982: 138, fig. 48; Myers 1986: 287; Myers 1989: 66; Myers 1990: 151, 156; Myers 1995: 38; Myers 1997: 108; Appadoo & Myers 2004: 347; Ren 2001: 72; Ren 2006: 232, fig. 89; Hughes & Peart 2013: 93, fig. 60; Peart & Hughes 2014: 833, figs. 71–74

Not *P. vorax*: Myers, 1985: 33, figs 24–25 (accepted as *P. latipoda*, following Ren 2006)

**Material examined.** All the specimens were collected at 26°21'16"N, 126°51'25"E, Shichu-gama, Kumejima Island, Okinawa, Japan, 6–8 m deep, algal turf of *Jania* sp. on coral reefs, on September 9, 2016, by M. Kodama using SCUBA: 1

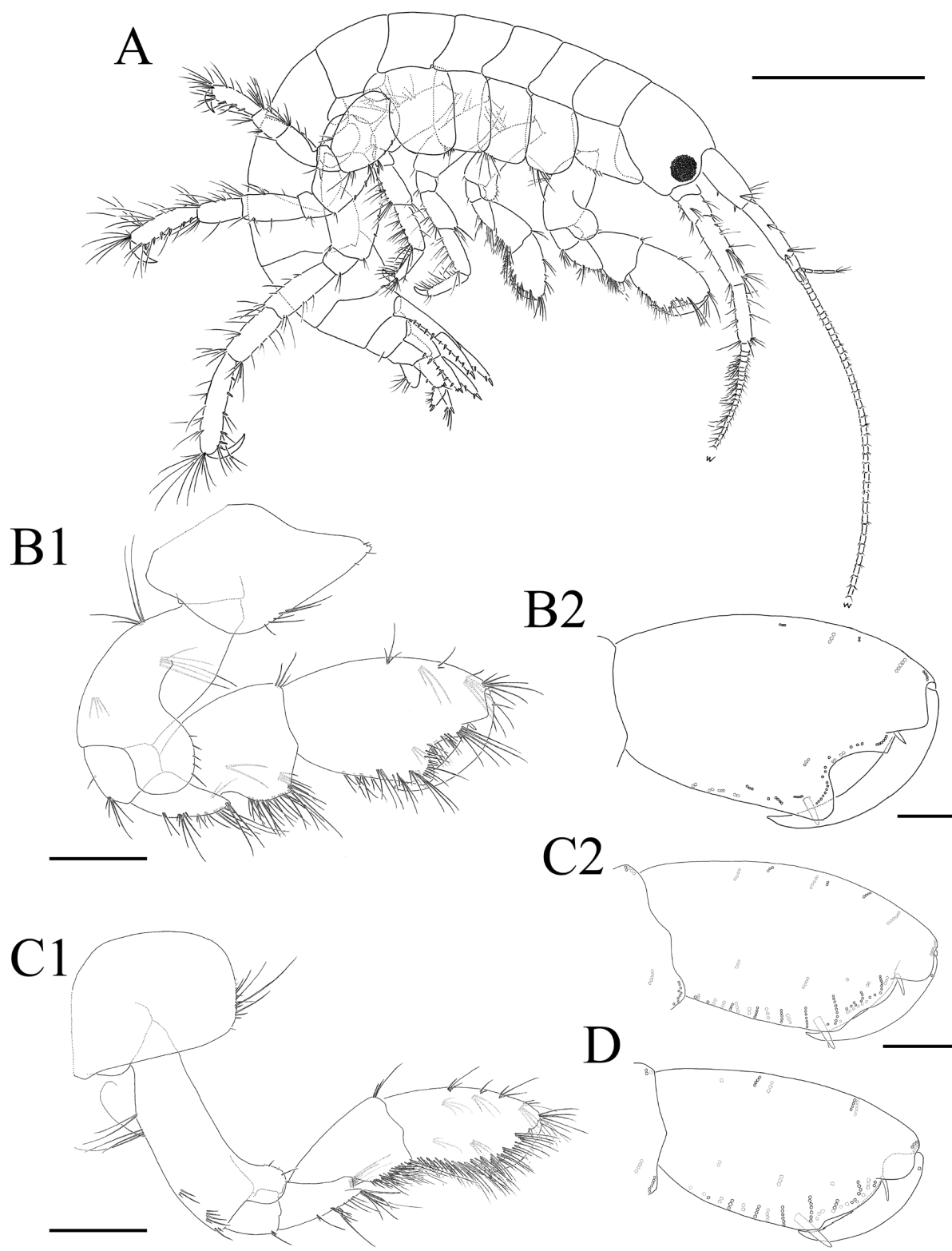


Fig. 1. *Paragrubia vorax* Chevreux, 1901. A–C, male, 11.5 mm (RUMF-ZC-6201); D, male, 7.3 mm (RUMF-ZC-6203). A, habitus (pleopods and coxal gills omitted), lateral view; B1, right gnathopod I, lateral view; B2, propodus and dactylus of right gnathopod I (setae omitted), lateral view; C1, right gnathopod II, lateral view; C2 and D, propodus and dactylus of right gnathopod II (setae omitted), lateral views. Scale bars: A, 2.0 mm; B1 and C1, 1.0 mm; B2, C2 and D, 0.2 mm.

図1. ネットアイヒゲナガ (新称). A–C, 雄, 11.5 mm (RUMF-ZC-6201); D, 雄, 7.3 mm (RUMF-ZC-6203). A, 全身 (腹肢, 鰓は省略), 側面図; B1, 右第1咬脚, 側面図; B2, 右第1咬脚の前節および指節, 側面拡大図 (刺毛は省略); C1, 右第2咬脚, 側面図; C2およびD, 右第2咬脚の前節および指節, 側面拡大図 (刺毛は省略). スケールバー: A, 2.0 mm; B1 and C1, 1.0 mm; B2, C2 and D, 0.2 mm.

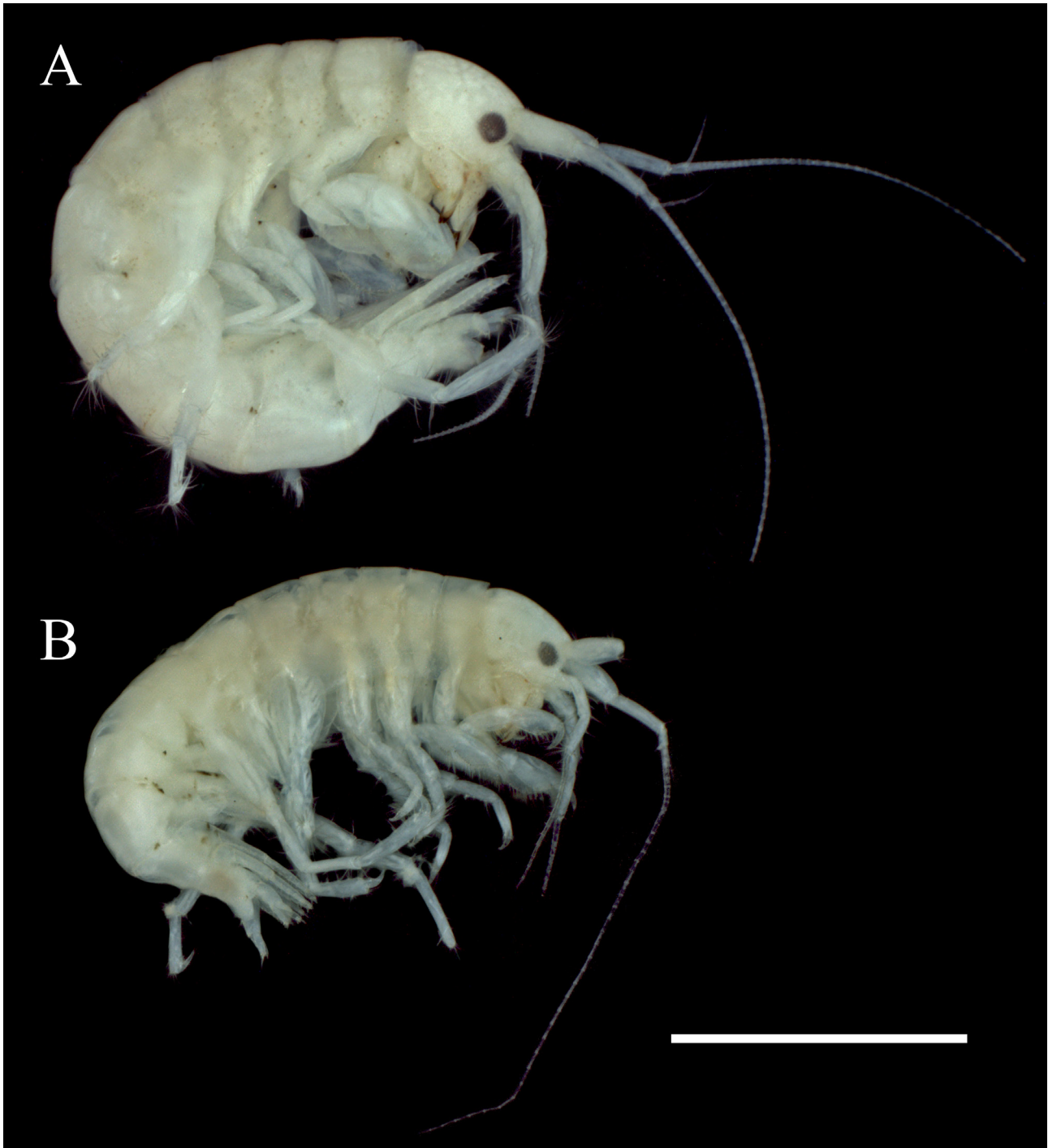


Fig. 2. *Paragrubia vorax* Chevreux, 1901, specimens fixed with 70% ethanol. A, male, 11.5 mm (RUMF-ZC-6201), habitus, lateral view; B, female, 8.6 mm (RUMF-ZC-6202), habitus, lateral view. Scale bar: 3.0 mm.

図2. ネットイヒゲナガ (新称), 70% エタノールで固定後の標本. A, 雄, 11.5 mm (RUMF-ZC-6201), 全身, 側面写真; B, 雌, 8.6 mm (RUMF-ZC-6202), 全身, 側面写真. スケールバー: 3.0 mm.

male, 11.5mm (RUMF-ZC-6201; voucher specimen designated for new Japanese name), 1 female 8.6 mm (RUMF-ZC-6202), 1 male 7.3 mm (RUMF-ZC-6203), 1 female 9.3 mm (RUMF-ZC-6204).

**Diagnosis.** Antenna I accessory flagellum with 4 or 5 articles. Mandibular setal row with 6–9 (usually 7) robust setae. Lower lip outer plates weakly notched. Maxilla I inner plate with 1 plumose

seta; palp article II with 3–5 (usually 4) robust setae. Gnathopod I larger than gnathopod II; coxa produced anteriorly, but not reaching antennal sinus of head; basis with large anterodistal lobe; ischium lacking anterodistal lobe; carpus lacking robust setae dorsally; propodus palm with deep excavation. Gnathopod II coxa not tapering distally; basis with anterodistal lobe; ischium lacking anterodistal lobe;

propodus palm convex, sometimes with shallow depression on palm. Epimeral plates II and III each with small tooth on posterodistal corner. Telson subtrapezoidal, with oblique medial rows of slender setae and lateral rows of slender setae.

**Distribution.** South Africa (Griffiths 1973, 1976); Red Sea (Ruffo 1938, 1969); Madagascar (Ledoyer 1982); Seychelles (Chevreux 1901; type locality); Mauritius (Appadoo & Myers 2004); Maldives (Walker 1905); Indonesia (Schellenberg 1938); South China Sea (Ren, 2001, 2006); Kumejima Island, Japan (present study); Papua New Guinea (Peart & Hughes 2014); Kosrae (Myers 1995); New Caledonia (Ledoyer 1984; Peart & Hughes 2014); Norfolk Island (Hughes & Peart 2013); Tonga (Myers 1986); Western Samoa (Myers 1997); Cook Islands (Myers 1990); Hawaii (Barnard 1955, 1970); Society Island (Myers 1989).

**Remarks.** Our specimens at hand agree with the original description of *P. vorax* by Chevreux (1901) and also recent redescriptions and illustrations by Ledoyer (1982), Ren (2006), Hughes & Peart (2013), and Peart & Hughes (2014). Appadoo & Myers (2004) indicated that two morphological types are recognized in the male gnathopod I: one (including type material) has a deep excavation on the palm, and the other has a shallow excavation, and they also implied that more than one species exist in the *P. vorax*. Indeed, materials described by Myers (1985) from Fiji having a shallow excavation were recently accepted as *P. latipoda* (see Ren 2001, 2006). Our Japanese specimens has a deeply excavated palm on male gnathopod I (Fig. 1B2), and thus, should be attributed to the true *P. vorax*.

In our specimens, male gnathopod II palm show a small morphological variation: one male has convex palm with a shallow depression on proximal area of the palm (RUMF-ZC-6203; Fig. 1D), while another male has convex palm with a shallow depression on rather center area of the palm (RUMF-ZC-6201; Fig. 1C2). This small variation appears to be an intraspecific variation.

The present species, *P. vorax*, closely resembles *P. latipoda* and *P. edgari* in sharing large male gnathopod I (larger than gnathopod II; Fig. 1A), and convex palm of gnathopod II (Fig. 1C2, D). However, the present species can be distinguished from *P. latipoda* by the following points: (1) gnathopod I coxa is more produced anteriorly (Fig. 1B1) than that of *P. latipoda*, (2) gnathopod I carpus lacks robust seta dorsally (Fig. 1B1), while that of *P. latipoda* bears 3 pair of robust setae dorsally, and (3)

gnathopod II coxa is parallel (not tapering distally; Fig. 1C1), whereas that of *P. latipoda* is tapering distally. The present species also differs from *P. edgari* in the following points: (1) epimeral plates II and III each have a small tooth on the posteroventral corners (Fig. 1A), while in *P. edgari*, their posteroventral corners are rounded without tooth; (2) female gnathopod II basis has an anterodistal lobe, whereas that of *P. edgari* lacks the anterodistal lobe.

*Paragrubia vorax* has been reported from a wide area of Indo-Pacific, but never from Japan. Our specimens examined in this study represent the first Japanese record of the species as well as the genus, and also represent the northernmost record of the species in Pacific Ocean.

### Acknowledgments

We greatly acknowledge the first author's diving buddy, Shota Nakamura, and also diving guides Hiroshi Akazaki and Hiromi Akazaki (e's Diving), for supporting collecting materials at Kumejima Island. We are grateful to Dr. Ko Tomikawa (Hiroshima University) and another anonymous reviewer for their helpful comments on our manuscript.

### References

- Appadoo, C., & A.A. Myers, 2004. Corophiidea (Crustacea: Amphipoda) from Mauritius. Records of the Australian Museum 56: 331–362.
- Barnard, J.L., 1955. Gammaridean Amphipoda (Crustacea) in the collections of the Bishop Museum. Bernice P. Bishop Museum Bulletin, 215: 1–46.
- Barnard, J.L., 1970. Sublittoral Gammaridea (Amphipoda) of the Hawaiian Islands. Smithsonian Contributions to Zoology, 34: 1–286.
- Chevreux, E., 1901. Crustacés amphipodes mission scientifique de M. Ch. Alluaud aux Iles Seychelles (mars, avril, mai, 1892). Mémoires de la Société de France 14: 388–438.
- Conlan, K.E., 1982. Revision of the gammaridean amphipod family Ampithoidae using numerical analytical methods. Canadian Journal of Zoology, 60: 2015–2027.
- Griffiths, C.L., 1973. The Amphipoda of southern Africa. Part 1. The Gammaridea and Caprellidea of southern Moçambique. Annals of the South African Museum, 60(10): 265–306.

- Griffiths, C.L., 1976. Guide to the Benthic Marine Amphipods of Southern Africa. Trustees of the South African Museum, Cape Town.
- Hughes, L.E. & R.A. Peart, 2013. New species and new records of Ampithoidae (Peracarida: Amphipoda) from Australian waters. *Zootaxa*, 3719(1): 1–102.
- Ledoyer, M., 1967. Amphipodes gammariens des herbiers de phanérogames marines de la région de Tuléar (République Malgache) Étude systématique et écologique. *Annales de l'Université de Madagascar*, 5: 121–170.
- Ledoyer, M., 1982. Crustacés amphipodes gammariens. Familles des Acanthonotozomatidae à Gammaridae. *Faune de Madagascar*, 59(1): 1–598.
- Ledoyer, M., 1984. Les gammariens (Crustacea, Amphipoda) des herbiers de phanérogames marines de Nouvelle Calédonie (région de Nouméa). *Mémoires du Muséum National d'Histoire Naturelle, Series A, Zoology*, 129, 1–113.
- Myers, A.A., 1985. Shallow-water, coral reef and mangrove Amphipoda (Gammaridea) of Fiji. *Records of the Australian Museum, Supplement 5*: 1–144.
- Myers, A.A., 1986. Amphipoda from the South Pacific: Tonga. *Records of the Australian Museum*, 38(5): 271–289.
- Myers, A.A., 1989. Amphipoda from the South Pacific: the Society Islands. *Records of the Australian Museum*, 41 (1): 63–82.
- Myers, A.A., 1990. Amphipoda from the South Pacific: the Cook Islands. *Records of the Australian Museum*, 42(2): 149–157.
- Myers, A.A., 1995. Marine Amphipoda of Micronesia: Kosrae. *Records of the Australian Museum*, 47: 27–38.
- Myers, A.A., 1997. Amphipoda from the South Pacific: Western Samoa. *Records of the Australian Museum*, 49: 99–109.
- Peart, R.A. & S.T. Ahyong, 2016. Phylogenetic analysis of the family Ampithoidae Stebbing, 1899 (Crustacea: Amphipoda), with a synopsis of the genera. *Journal of Crustacean Biology*, 36(4): 456–474.
- Peart, R.A. & L.E. Hughes, 2014. Ampithoid amphipods from the South Pacific: Papua New Guinea, French Polynesia and New Caledonia. *Journal of Natural History*, 48(13–14): 739–861.
- Poore, A.G.B., N.A. Hill & E.E. Sotka, 2008. Phylogenetic and geographic variation in host breadth and composition by herbivorous amphipods in the family Ampithoidae. *Evolution*, 62(1): 21–38.
- Ren, X., 2001. Gammaridean shrimps from the family Ampithoidae (Crustacea: Amphipoda) from Hainan Island, South China Sea. In: Matsuura, K. (ed.), *Marine Fauna of the Shallow Waters around Hainan Island, South China Sea*. National Science Museum Monographs, 21: 65–71, Tokyo.
- Ren, X., 2006. *Fauna Sinica, Invertebrata, Vol. 41, Crustacea: Amphipoda: Gammaridea (I)*. Science Press, Beijing.
- Ruffo, S., 1938. Studi sui Crostacei Anfipodi. VIII. Gli Anfipodi marine del Museo Civico di Storia Naturale di Genova. (a) Gli Anfipodi del Mediterraneo. *Annali del Museo Civico di Storia Naturale, Genova*, 60: 127–151.
- Ruffo, S., 1969. Studi sui crostacei anfipodi. LXVII. Terzo contributo alla conoscenza degli anfipodi del Mar Rosso. *Memorie del Museo Civico di Storia Naturale, Verona*, 17: 1–77.
- Schellenberg, A., 1938. Litorale Amphipoden des tropischen Pazifiks nach Sammlungen von Prof. Bock (Stockholm), Prof. Dahl (Berlin) und Prof. Pietschmann (Wein). *Kungliga Svenska Vetenskapsakademiens Handlingar Series*, 3, 16(6): 1–105.
- Walker, A.O., 1905. Marine crustaceans. XVI. Amphipoda. *Fauna and Geography of the Maldive and Laccadive Archipelagos*, 2, Supplement 1: 923–932, pl. 88.
- Walker, A.O., 1909. Amphipoda Gammaridea from the Indian Ocean, British East Africa, and the Red Sea. *Transactions of the Linnean Society, London, Series 2, Zoology*, 12(4): 323–44, pls 42–43.

久米島から採集された日本初記録となるネットイヒゲナガヨコエビ属 (新称) *Paragrubia Chevreaux, 1901* (端脚目: ヒゲナガヨコエビ科)

小玉将史\*・河村知彦

〒028-1102 岩手県上閉伊郡大槌町赤浜 1-19-8 東京大学大気海洋研究所国際沿岸海洋研究センター

\* 通信著者 (e-mail: [mkodama@aori.u-tokyo.ac.jp](mailto:mkodama@aori.u-tokyo.ac.jp))

要旨. 久米島から採集された標本に基づき, ネットイヒゲナガヨコエビ属 (新称) *Paragrubia*

Chevreur, 1901 のネッタイヒゲナガ (新称) *P. vorax* Chevreur, 1901 を報告する。これは本属・種の日本からの初記録であるとともに、太平洋における本種の分布の北限記録となる。

投稿日：2018 年 7 月 11 日

受理日：2018 年 8 月 28 日

発行日：2018 年 9 月 10 日